Customer No.: 31561
Application No.: 10/708,372
Docket No.: 12680-US-PA

AMENDMENTS

To the Claims:

Please amend claims as follows.

Claims 1-11 (canceled).

12. (currently amended) A shallow trench isolation, comprising:

a substrate, having a trench therein;

a high density plasma (HDP) ~~an~~ insulating layer, disposed in the trench, wherein the insulating layer has an upper surface higher than an upper surface of the substrate; and

a liner layer, formed over the substrate covering the insulating layer so that the liner layer protects the shallow trench isolation from external stress or thermal effect.

13. (original) The shallow trench isolation according to claim 12, wherein the liner layer further extends to an upper surface of the substrate.

14. (original) The shallow trench isolation according to claim 12, wherein the liner layer has a low etching selectivity relative to the insulating layer.

15. (original) The shallow trench isolation according to claim 12, wherein the liner layer has a thickness between 50 angstrom to 200 angstrom.

16. (original) The shallow trench isolation according to claim 12, wherein the liner layer comprises an insulating layer.

17. (original) The shallow trench isolation according to claim 16, wherein the liner layer is a silicon nitride layer.

18. (original) The shallow trench isolation according to claim 12, further comprising a pad oxide layer formed between the liner layer and the substrate.

19. (original) The shallow trench isolation according to claim 12, further comprising another insulating layer covering the liner layer.

20. (currently amended) A shallow trench isolation, comprising:

a substrate, having a trench therein;

a HDP ~~an~~ insulating layer, disposed in the trench; and

a liner layer, formed over the substrate covering the insulating layer so that the liner layer protects the shallow trench isolation from external stress or thermal effect.

21. (previously presented) The shallow trench isolation according to claim 20, wherein the liner layer further extends to an upper surface of the substrate.

22. (previously presented) The shallow trench isolation according to claim 20, wherein the liner layer has a low etching selectivity relative to the insulating layer.

23. (previously presented) The shallow trench isolation according to claim 20, wherein the liner layer has a thickness between 50 angstrom to 200 angstrom.

24. (previously presented) The shallow trench isolation according to claim 20, wherein the liner layer comprises an insulating layer.

25. (previously presented) The shallow trench isolation according to claim 20, further comprising a pad oxide layer formed between the liner layer and the substrate.

26. (previously presented) The shallow trench isolation according to claim 20, further comprising another insulating layer covering the liner layer.

27. (new) A shallow trench isolation, comprising:

a substrate, having a trench therein;

an insulating layer, disposed in the trench, wherein the insulating layer has an upper surface higher than an upper surface of the substrate;

a liner layer, formed over the substrate covering the insulating layer so that the liner layer protects the shallow trench isolation from external stress or thermal effect; and

a pad oxide layer, directly in contact with the insulating layer and disposed between the substrate and the liner layer.

28. (new) The shallow trench isolation according to claim 27, wherein the liner layer further extends to an upper surface of the substrate.

29. (new) The shallow trench isolation according to claim 27, wherein the liner layer has a low etching selectivity relative to the insulating layer.

30. (new) The shallow trench isolation according to claim 27, wherein the liner layer has a thickness between 50 angstrom to 200 angstrom.

31. (new) The shallow trench isolation according to claim 27, wherein the liner layer is a silicon nitride layer.